

ABSTRACT OF THE DISCLOSURE

1 A matrix of AND-gates correspond to respective
codes to be assigned to strings. The outputs of the
AND-gates are selectively coupled to prefix code inputs
of the AND-gates through a prefix code matrix switch.
5 A plurality of characters from the input stream are
fetched into an input character buffer and applied through
respective character decoders and selectively through
a character matrix switch to character inputs of the
AND-gates. An AND-gate corresponding to a code assigned
10 to a string that is the longest match to the plurality
of fetched characters is thereby enabled. Update extended
strings are recorded in the AND-gates, an extended string
comprising a longest matching string extended by the
data character following the longest matching string.
15 A virtual level is assigned to an AND-gate indicative
of the number of characters of the string recorded
thereby, the virtual level being one greater than the
level that had been assigned to the AND-gate corresponding
to the longest match. The virtual level is also
20 indicative of the stage of the input character buffer
holding the character following the longest match. An
AND-gate is reassigned to an extended string to be
recorded when further codes are unavailable for assignment
and the output of the AND-gate is not coupled to the
25 prefix code input of another AND-gate.

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